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(72) Inventor WILLIAM JAMES PETER CURRALL



## (54) IMPROVEMENTS RELATING TO ROTARY ELECTRIC SWITCHES

(71) We, THE PLESSEY COMPANY LIMITED, a British Company of 2/60 Vicarage Lane, Ilford, Essex, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to rotary electric switches and relates more specifically to rotary switch constructions which provide improved flexibility of switching contact arrangements according to requirements thereby enabling the number of standard switch parts which need to be stocked to be significantly reduced.

According to the present invention there is provided a rotary electric switch comprising a generally cup-shaped insulating stator body with axially-extending recesses provided on the inner periphery thereof for receiving bladed parts of a stator contact structure which comprises a metal stamping embodying a ring part arranged to be seated on the internal end wall of the stator body and having said bladed parts extending substantially at right angles to said ring part and accommodated in the recesses of the stator body, the switch also comprising a rotor which is mounted within the stator body on a spindle extending axially therethrough and including one or more bridging contact members which have mutually perpendicular contact parts which respectively engage the axially extending bladed parts and said ring part of the stator contact structure, and the stator body having openings provided through which connecting parts of the stator contact structure extending between said ring part and the bladed parts can be severed at will in order to provide the requisite switch contact arrangement.

The rotor may comprise an insulating disc having radial slits therein for receiving the rotor contacts which are preformed to provide contact portions which are mutually perpendicular.

The switch according to the invention may comprise a number of stator bodies as

aforesaid which may be suitably secured together as by providing inter-engaging castellated edges, each stator body having its appertaining stator contact structure and its associated rotor and rotor contacts within it. The rotor will be carried by a common spindle which extends through the switch.

By way of example the present invention will now be described with reference to the accompanying drawing which shows an exploded diagrammatic view of a rotary electric switch according to the invention.

Referring to the drawing the switch comprises a cup-shaped insulating stator body 1 which has a number of recesses 2 provided on the inner periphery of the stator body. The body also has an opening 3 which permits the passage of a rotor spindle (not shown), the stator body 1 being arranged to receive a stator contact structure shown partly at 4 which includes a ring part 5 arranged to be seated on the end wall 6 of the stator body and bladed parts 7 which are at right-angles to the ring part 5 and which are accommodated in the axially extending recesses 2 of the stator body 1. The switch also comprises a disc rotor 8 of insulating material having slits 9 which receive rotor contact members 10 which are bent as can best be seen in the enlarged views to provide contact portions 11 and 12 which are mutually perpendicular so that these portions will engage respectively with the bladed parts 7 and the ring part 5 of the stator contact structure when it is inserted into the stator body. The rotor is mounted on a spindle (not shown) which extends through the stator body and the rotor is retained by means of a retainer member 13 through which the rotor shaft also extends.

After insertion of the stator contact structure 4 into the cup-shaped stator body 1 the connecting parts 14 between the bladed parts 7 and the ring part 5 may be severed by inserting a suitable cutting tool through slots (not shown) provided in the end wall 6 of the stator body 1 at the position where this wall is contiguous with the cylindrical

wall of the body. In this way appropriate connecting parts 14 may be severed in order to provide the requisite switching arrangement to be provided between the rotor bridging contacts and the stator.

As will readily be understood, by the use of a standard stator contact structure and severing appropriate connecting parts 14 according to switching requirements a significant saving can be achieved in the number of switch parts required to be stocked.

As will also be appreciated a number of switch stator bodies can be secured together in line with the rotors within the bodies having a common spindle extending through the switch.

WHAT WE CLAIM IS:—

1. A rotary electric switch comprising a generally cup-shaped insulating stator body with axially-extending recesses provided on the inner periphery thereof for receiving bladed parts of a stator contact structure which comprises a metal stamping embodying a ring part arranged to be seated on the internal end wall of the stator body and having said bladed parts extending substantially at right-angles to said ring part and accommodated in the recesses of the stator body, the switch also comprising a rotor which is mounted within the stator body on a spindle extending axially there-through and including one or more bridging

contact members which have mutually perpendicular contact parts which respectively engage the axially extending bladed parts and said ring part of the stator contact structure, and the stator body having openings provided through which connecting parts of the stator contact structure extending between said ring part and the bladed parts can be severed at will in order to provide the requisite switching contact arrangement.

2. A rotary electric switch as claimed in claim 1, in which the rotor comprises an insulating disc having radial slits therein for receiving the rotor contacts which are preformed to provide contact portions which are mutually perpendicular.

3. A rotary electric switch as claimed in claim 1 or claim 2, in which a number of stator bodies are secured together by inter-engaging castellated edges, each stator body having its appertaining stator contact structure and its associated rotor and rotor contacts within it, the rotors being carried by a common spindle which extends through the switch.

4. A rotary electric switch substantially as hereinbefore described with reference to the accompanying drawing.

K. J. THORNE,  
Chartered Patent Agent,  
For the Applicants.

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# COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of the Original on a reduced scale*

